UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF COMMERCIAL FISHERIES

CALIFORNIA FISHERY MARKET NEWS MONTHLY SUMMARY

MARCH 1967

PART II–Fishing Information*

Sea-surface temperatures, fishing and research information of interest to the West Coast tuna-fishing industry and marine scientists

CONTENTS

Page

Sea Surface Temperature Charts, Eastern Pacific Ocean, March 1967 1

Bureau of Commercial Fisheries
Tuna Resources Laboratory
P. O. Box 271
La Jolla, California 92038

*Part 1 - "Fishery Products Production and Market Data" is issued by the Bureau of Commercial Fisheries, Market News Service, Post Office Building, San Pedro, California

SEA SURFACE TEMPERATURE CHARTS, EASTERN PACIFIC OCEAN

MARCH 1967

Acknowledgements

The following organizations and stations contributed data for the March 1967 charts:

U.S. Bureau of Commercial Fisheries Exploratory Fishing and Gear Research Base, Seattle, Washington

U.S. Bureau of Commercial Fisheries Biological Laboratories La Jolla, California; Honolulu, Hawaii; and Seattle, Washington

U.S. Coast Guard Cutter Rockaway

U.S. Coast Guard Air Station, San Diego, California

U.S. Naval Communication Station Balboa, Fort Amador, Canal Zone

U.S. Naval Weather Service, Fleet Numerical Weather Facility, Monterey, California

Environmental Science Services Administration
U.S. Weather Bureau, San Diego, California
U.S. Weather Bureau Forecast Center, Los Angeles, California

Hopkins Marine Station, Pacific Grove, California by J. P. Balesteri

Inter-American Geodetic Survey by David Ortega at Manzanillo, Mexico; R. Peren at Pt. Armuelles, Panama; V. E. Castillo at Tumaco, Colombia; S. Valenzuela at La Libertad, Ecuador; E. Guerrero at Talara, Peru; J. Cardenas and Juan Andia at San Juan, Peru; L. Caceres and H. Jofre at Valparaiso, Chile

Inter-American Tropical Tuna Commission, La Jolla and Terminal Island, California

Kelco Company, San Diego, California

Oregon State University, Department of Oceanography, Corvallis, Oregon R/V Yaquina

Pacific Oceanographic Group, Nanaimo, British Columbia, by H. J. Hollister from observations by T. Collins at Quatsino Lightstation; P. B. Robertson at Cape St. James Light; O. A. Edwards at Amphitrite Point Light; G. C. Wilkes at Langara Island Light

Scripps Institution of Oceanography, La Jolla, California by Margaret Robinson and Hans Klein

Texas A & M University, R/V Alaminos

W. R. Grace and Company, New York by Dr. I. William Lane

Ships Californian and Royal Pacific

Charts

Figure 1.--Mean sea surface temperatures (°F) derived from approximately 9000 observations. Squares show temperatures at weather ship stations. Numerals on shore are temperatures at coastal and lightship stations.

Figure 2.--Deviation of sea surface temperatures (°F) from long term charts of H.O. 225. Hatched areas are colder in 1967.

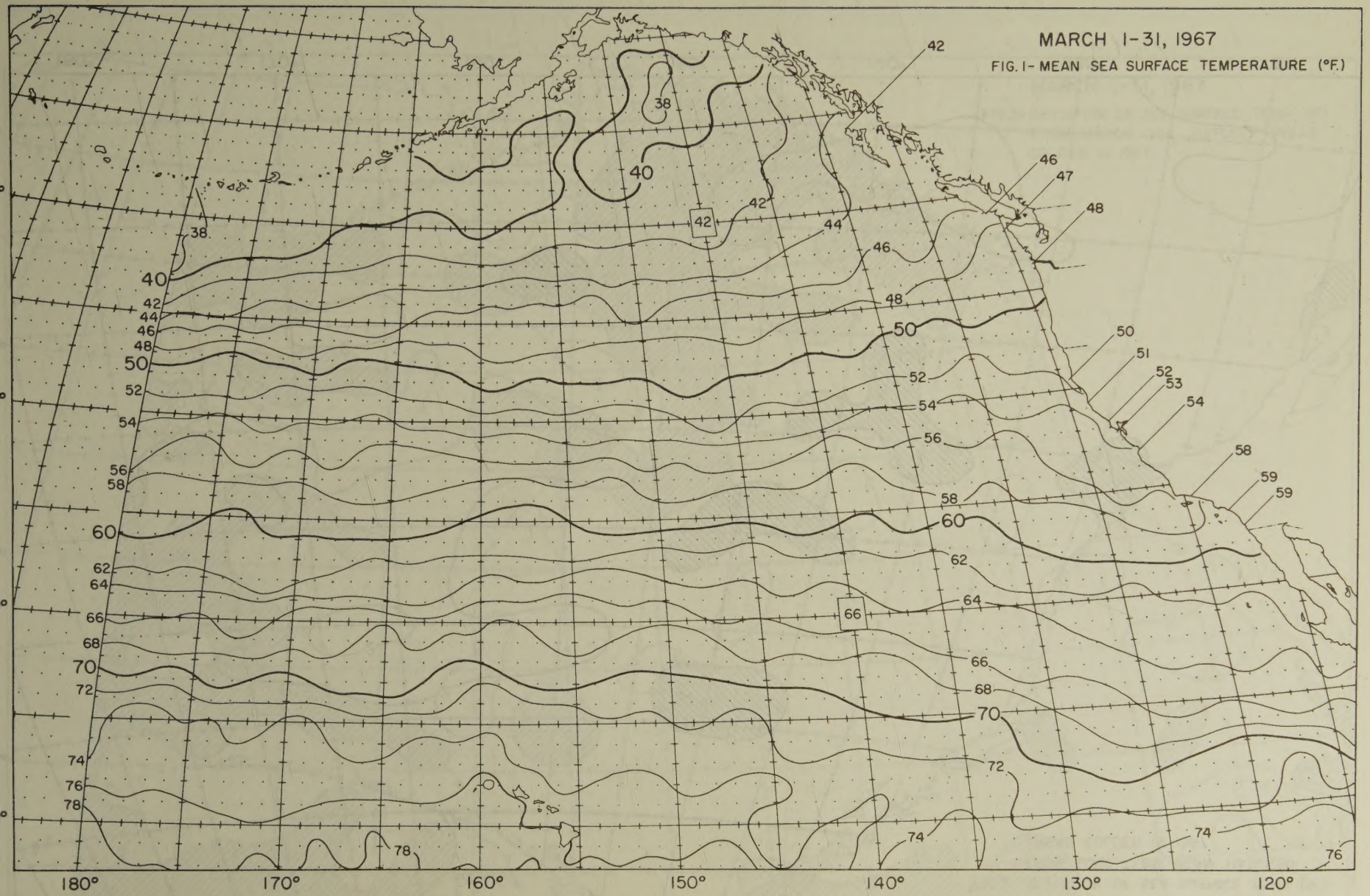
Figure 3.--Deviation of sea surface temperatures (°F) from those of March 1966. Hatched areas are colder in 1967.

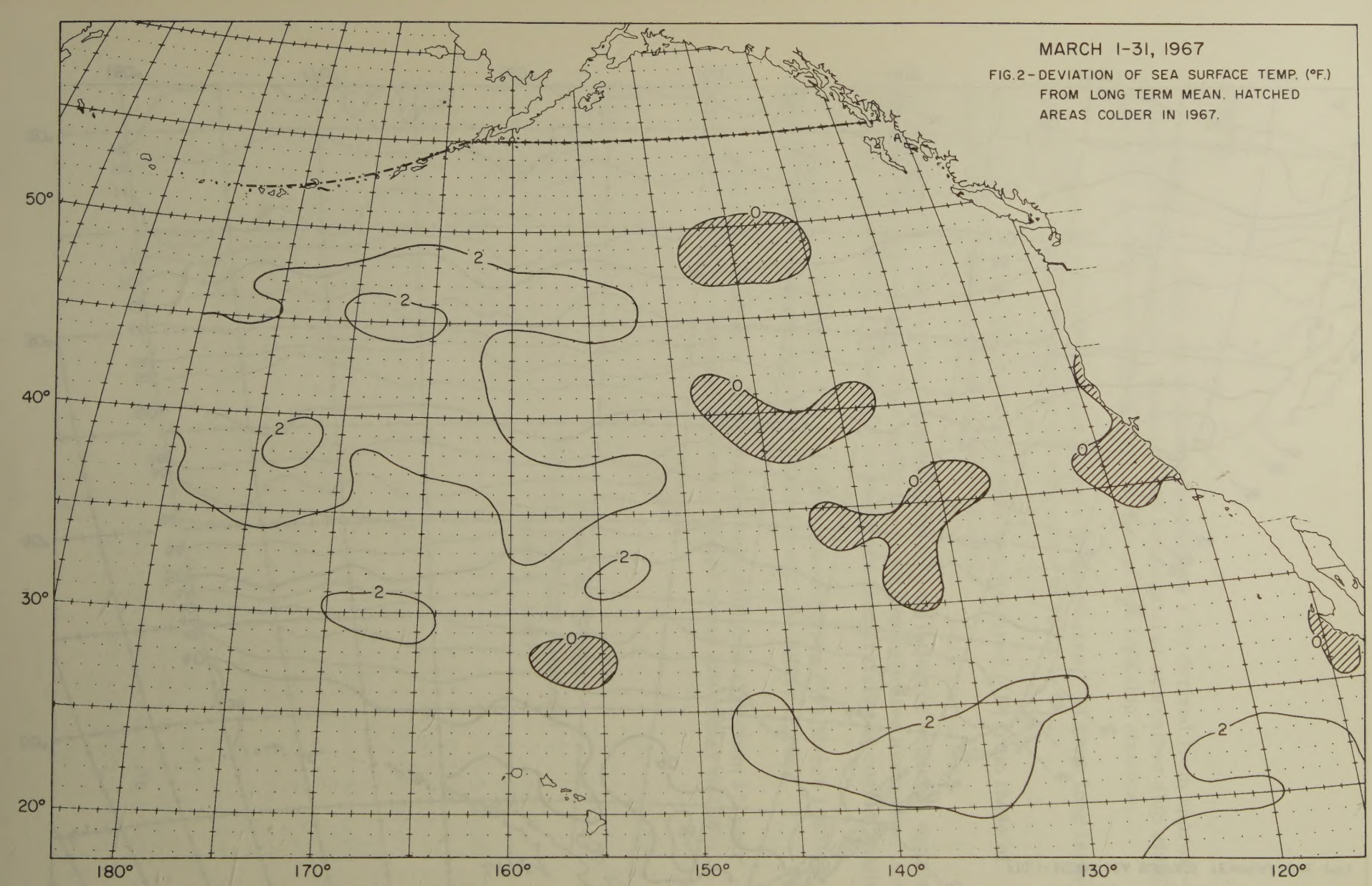
Figure 4.--Sea surface temperatures (°F) by 1-degree squares, approximately 3000 observations. Line under temperatures indicates average of two or more observations. Numerals on shore are temperatures at coastal stations.

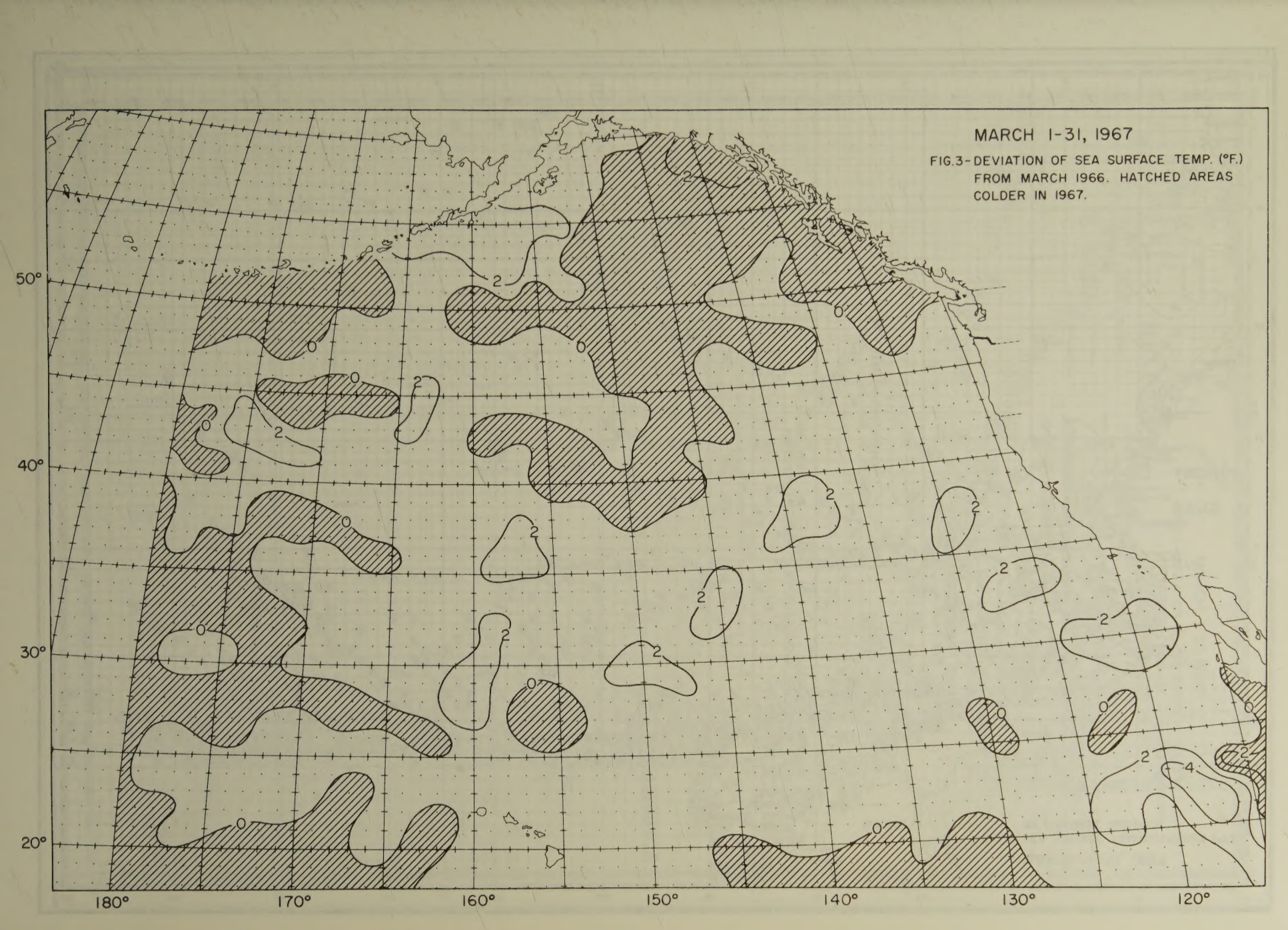
Figure 5.--Deviation of sea surface temperatures (°F) March 1967-March 1966 by 1-degree squares. Shaded areas are colder in 1967.

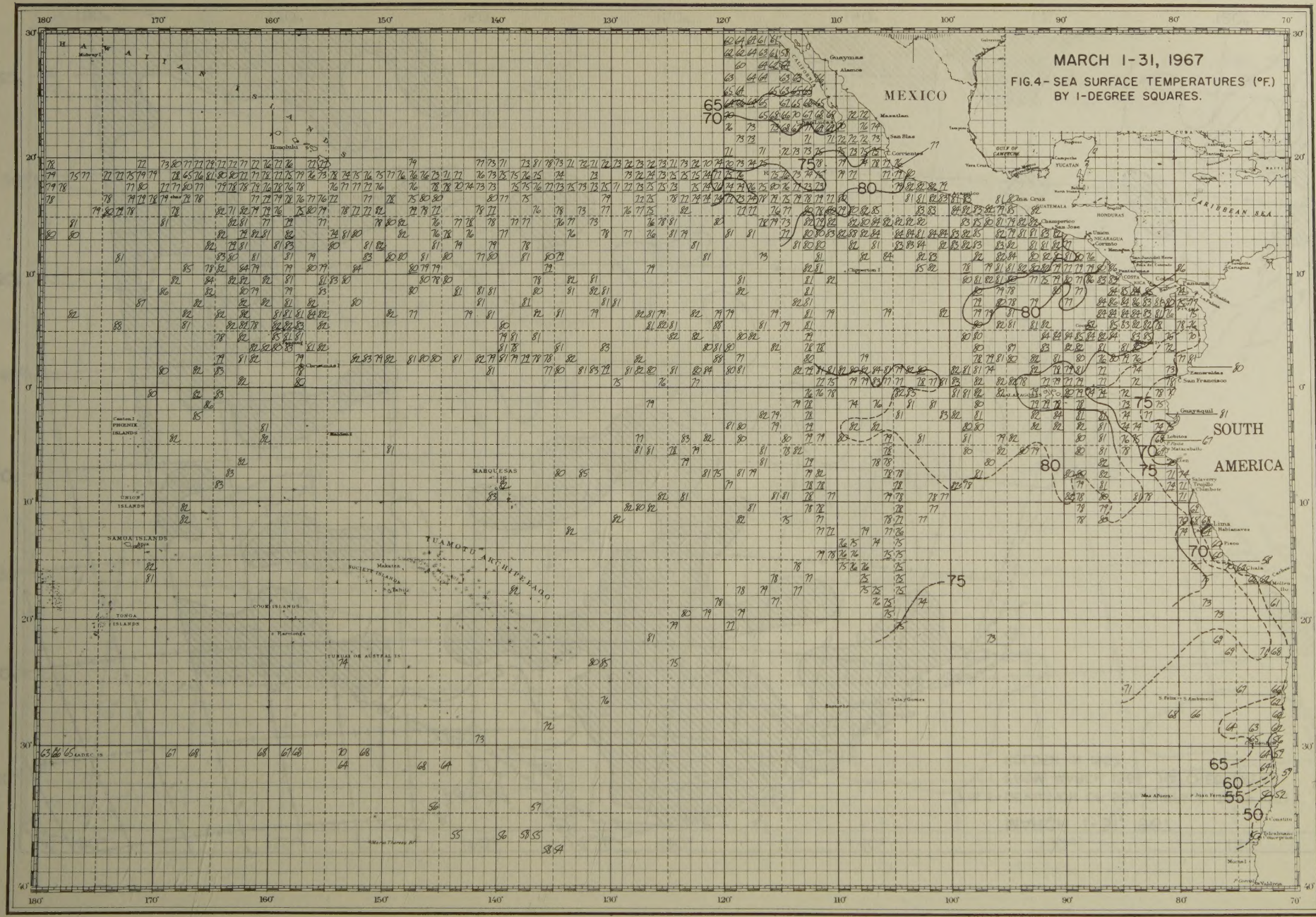
Figure 6.--Deviation of sea surface temperatures (°F) from 12-year mean (1947-1958) by 2-degree squares. Shaded areas are colder in 1967.

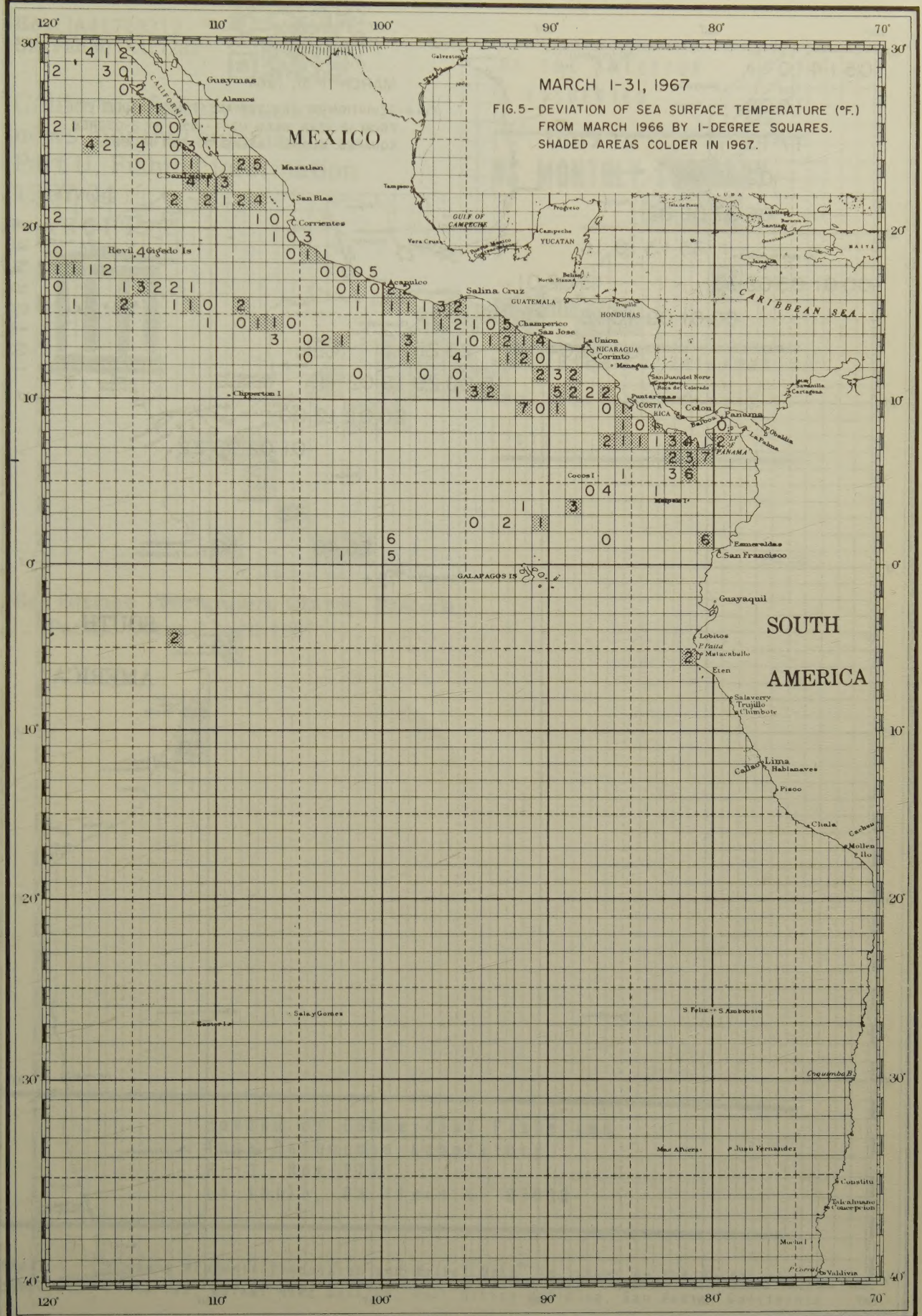
James A. Renner
Fishery Biologist (General)
April 6, 1967

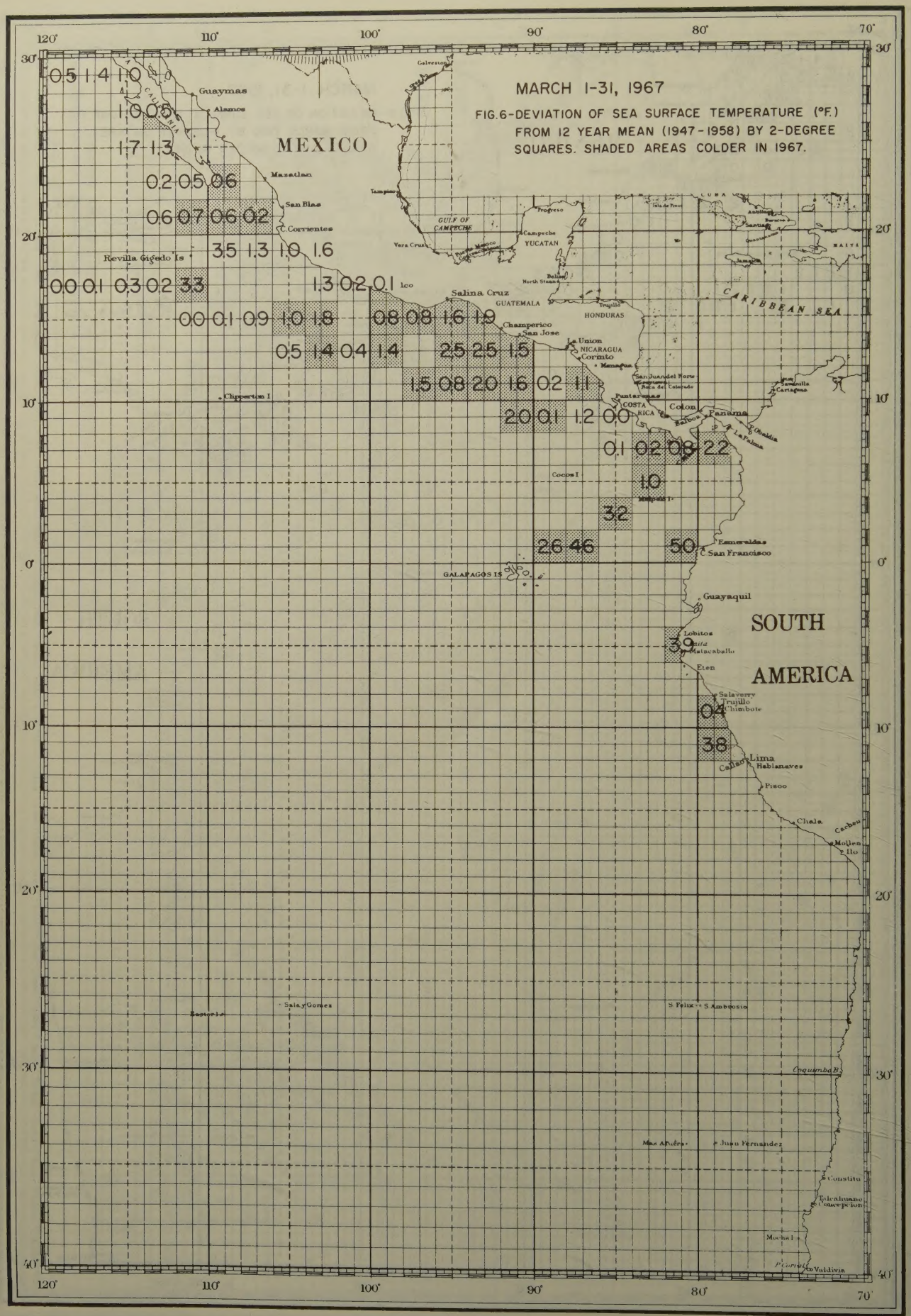

MARCH 1-31, 1967
FIG. 1- MEAN SEA SURFACE TEMPERATURE (°F.)
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°
38
40
42
44
46
48
50
52
54
56
58
60
62
64
66
68
70
72
74
76
78


MARCH 1-31, 1967
FIG. 2 - DEVIATION OF SEA SURFACE TEMP. (°F.) FROM LONG TERM MEAN. HATCHED AREAS COLDER IN 1967.
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°
0
2


MARCH 1-31, 1967
FIG.3-DEVIATION OF SEA SURFACE TEMP. (°F.) FROM MARCH 1966. HATCHED AREAS COLDER IN 1967.
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°


MARCH 1-31, 1967
FIG.4- SEA SURFACE TEMPERATURES (°F.)
BY 1-DEGREE SQUARES.
MEXICO
SOUTH
AMERICA
CARIBBEAN SEA
HAWAIIAN ISLANDS
Honolulu
PHOENIX ISLANDS
UNION ISLANDS
SAMOA ISLANDS
TONGA ISLANDS
COOK ISLANDS
MARQUESAS
TUAMOTU ARCHIPELAGO
Tahiti
Papeete
Guaymas
Alamos
Mazatlan
San Blas
Corrientes
Acapulco
Salina Cruz
Champerico
Corinto
Chipperton I.
Galapagos Is.
Guayaquil
Salaverry
Trujillo
Chimbote
Lima
Callao
Pisco
Mollendo
Arica
Iquique
Antofagasta
Valparaiso
Easter I.
Juan Fernandez Is.
Sala y Gomez
Marquesas
Nukuhiva
Hiva Oa
Fatuhiva
Tuamotu Archipelago
Rapa
Raivavae
Tubuai Is.
Austral Is.
Rarotonga
Samoa
Apia
Tonga
Fiji
Suva
Nadi
Kadavu
Rotuma
Wallis I.
Futuna
Aitutaki
Penrhyn
Manihiki
Rakahanga
Pukapuka
Nassau I.
Suwarrow
Palmyra
Christmas I.
Fanning I.
Canton I.
Enderbury I.
Malden I.
Jarvis I.
Howland I.
Baker I.
Kingman Reef
Johnston I.
Sand I.
Midway Is.
Wake I.
Eniwetok
Kwajalein
Majuro
Ponape
Truk
Yap
Guam
Saipan
Palau Is.
Marcus I.
Iwo Jima
Bonin Is.
Volcano Is.
Ryukyu Is.
Okinawa
Taiwan
Hong Kong
Manila
Luzon
Mindoro
Mindanao
Sulu Archipelago
Celebes
Borneo
Java
Sumatra
Singapore
Malaya
Andaman Is.
Nicobar Is.
Ceylon
Colombo
Madras
Calcutta
Rangoon
Bombay
Karachi
Aden
Socotra I.
Muscat
Persian Gulf
Bahrein I.
Kuwait
Basra
Abadan
Iran
Afghanistan
Pakistan
India
Nepal
Tibet
China
Mongolia
Siberia
Japan
Honshu
Hokkaido
Kyushu
Shikoku
Sakhalin
Kamchatka
Aleutian Is.
Alaska
Canada
Vancouver I.
Queen Charlotte Is.
Juneau
Sitka
Ketchikan
Prince Rupert
Seattle
Portland
San Francisco
Monterey
Los Angeles
San Diego
Ensenada
Guadalupe I.
Cedros I.
Magdalena Bay
Cabo San Lucas
La Paz
Mazatlan
Guaymas
Topolobampo
Mazatlan
Manzanillo
Acapulco
Salina Cruz
Tehuantepec
Puerto Angel
Champerico
San Jose
Corinto
Nicaragua
Costa Rica
Panama
Panama Canal
Balboa
Cristobal
Colon
Gatun Lake
Gulf of Panama
Gulf of Fonseca
Gulf of California
Gulf of Tehuantepec
Gulf of Mexico
Yucatan
Campeche
Veracruz
Tampico
Progreso
Cuba
Havana
Haiti
Jamaica
Puerto Rico
Virgin Is.
Lesser Antilles
Barbados
Trinidad
Tobago
Curacao
Aruba
Venezuela
Caracas
Maracaibo
Puerto Cabello
La Guaira
Cumana
Margarita I.
Guiana
Georgetown
Paramaribo
Cayenne
Brazil
Recife
Salvador
Rio de Janeiro
Santos
Sao Paulo
Montevideo
Buenos Aires
Bahia Blanca
Mar del Plata
Rio Negro
Comodoro Rivadavia
Puerto Deseado
Puerto Santa Cruz
Rio Gallegos
Tierra del Fuego
Ushuaia
Cape Horn
Falkland Is.
Port Stanley
South Georgia I.
Bouvet I.
Gough I.
Tristan da Cunha
St. Helena
Ascension I.
Fernando de Noronha
Natal
Fortaleza
Belem
Manaus
Iquitos
Pucallpa
Cuzco
Arequipa
Tacna
Antofagasta
Iquique
Arica
Valparaiso
Juan Fernandez Is.
Easter I.
Sala y Gomez
Marquesas
Tuamotu Archipelago
Tahiti
Papeete


MARCH 1-31, 1967
FIG. 5 - DEVIATION OF SEA SURFACE TEMPERATURE (°F.) FROM MARCH 1966 BY 1-DEGREE SQUARES. SHADED AREAS COLDER IN 1967.
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
GULF OF CAMPECHE
YUCATAN
GUATEMALA
HONDURAS
NICARAGUA
COSTA RICA
PANAMA
CUBA
HAITI
JAMAICA
GALAPAGOS IS
Guaymas
Alamos
Mazatlan
San Blas
Corrientes
Acapulco
Salina Cruz
Champerico
San Jose
La Union
Corinto
Managua
Punta Arenas
Colon
Panama
Cocos I
Esmeraldas
San Francisco
Guayaquil
Lobitos
Talara
Eten
Salaverry
Trujillo
Chimbote
Lima
Callao
Hablanaves
Pisco
Chala
Mollendo
Ilo
Arica
Iquique
Antofagasta
Coquimbo
Juan Fernandez
Constitucion
Talcahuano
Concepcion
Valdivia
Mocha I.
Sala y Gomez
S. Felix
S. Ambrosio
Easter I.
Clipperton I.
Revillagigedo Is.
Tampico
Galveston
Progreso
Campeche
Vera Cruz
Belize
Trujillo
Cartagena
Barranquilla
Aruba
Curacao
Santiago
Jamaica


MARCH 1-31, 1967
FIG.6-DEVIATION OF SEA SURFACE TEMPERATURE (°F.) FROM 12 YEAR MEAN (1947-1958) BY 2-DEGREE SQUARES. SHADED AREAS COLDER IN 1967.
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
GULF OF CAMPECHE
YUCATAN
GUATEMALA
HONDURAS
NICARAGUA
COSTA RICA
Panama
Colon
Guayaquil
Lima
Salina Cruz
Champerico
San Jose
Corinto
Clipperton I
Cocos I
GALAPAGOS IS
Esmeraldas
San Francisco
Pisco
Chala
Callao
Hablanaves
Chimbote
Trujillo
Eten
Lobitos
Matacaballo
Salaverry
Sala y Gomez
Juan Fernandez
Valdivia
Concepcion
Constitu
Mocha I.
Guaymas
Alamos
Mazatlan
San Blas
C. Corrientes
Revilla Gigedo Is
Tampico
Vera Cruz
Progreso
Campeche
Belize
Galveston
Cuba
Haiti
Jamaica
Trujillo
Roca de Colorado
Cartagena
Bahia Honda
Matachin
Chiriqui
Oranjita
La Palma
Esmeraldas
Cayo
Tres Marias
Islas Revillagigedo
Islas Galapagos
Islas Juan Fernandez
Islas Sala y Gomez
Islas San Felix y San Ambrosio
Islas Desventuradas
Islas Chiloe
Islas Guaitecas
Islas Wellington
Islas Diego Ramirez
Islas Evangelistas
Islas Chincha
Islas Lobos de Afuera
Islas Lobos de Tierra
Islas Macabi
Islas Foca
Islas Ballestas
Islas Pescadores
Islas Santa Rosa
Islas Santa Clara
Islas Santa Cruz
Islas Santa Maria
Islas Santa Barbara
Islas Santa Catalina
Islas Santa Isabel
Islas Santa Ana
Islas Santa Teresa
Islas Santa Lucia
Islas Santa Margarita
Islas Santa Inez